

REMARKS

Claims 1-17 and 61-86 were elected by Applicants in the Response of January 7, 2005. Upon further examination, the Examiner has restricted Group I into Group I-A (Claims 1-17) and Group I-B (Claims 61-86). Claims 1-17 were examined and stand rejected in the Office Action dated February 24, 2005. Claims 1-3 were objected to. Claims 1-3 and 17 have been amended, and claims 13 and 15 have been canceled in the instant office action. Support for the amendments may be found in the "Detailed Description of the Invention." Applicants respectfully request reconsideration of the present application in view of the following remarks.

I. Specification Objections

The disclosure was objected to for informalities. At paragraph 3 of the Office Action, it is stated that the recitation of "298.15" (Kelvin temperature) on page 5 and "298.15" on page 20 line 2 is not the same. Applicants are confused by this objection where "298.15" does not appear on page 20, line 2 and further, where the temperature on page 5 refers generally to an approximate atmospheric condition and the temperature recited on page 20 refers to a process temperature. Clarification of the objection is respectfully requested.

II. Claims Objections

While applicants deem the claims as written would be clear to one skilled in the art based on the instant specification, for purposes of further clarification claims 1, 2, and 3 have been amended to overcome the objection. No new matter is deemed to be added by this amendment.

III. The Claims are Not Anticipated by the Prior Art

Claims 1-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Stepanian et al. (USPG-PUB 2002/0094426 A1, herein after 'Stepanian'). Applicants respectfully traverse this rejection.

Stepanian teaches a planar two-phase aerogel composite material having 1) a low density aerogel matrix and 2) a reinforcing structure. The reinforcing structure is a continuous lofty fibrous batting reinforcement preferably in combination with individual short randomly oriented microfibers. The composite is formed by pouring an aerogel precursor solution into the fibrous batting to form the aerogel matrix composite. At page 4, lofty fibrous batting is defined as a fibrous material that shows the properties of bulk and resilience and is deemed to

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have sufficient loftiness if compressibility (at least 50%) and resilience (return to $\geq 70\%$ original thickness) properties are met. (See page 4, columns 1 and 2). Preferably the batting is in the form of a soft web, sheet, or layer as used in quilts, insulation blankets, etc.

Applicants disagree that Stepanian discloses or suggests the present invention. For example, there is no disclosure of a material comprising aerogel particles and PTFE binder, wherein the material is a powder or a putty, having the properties described in the claims. As stated on page 9 of the instant application, by 'binder' is meant that the aerogel particles are held together or cohere by the PTFE component.

Rejecting claims 13-17 of the instant invention, paragraph 8 of the Office Action states that the final material of Stepanian is in the form of a solid powder and that the material has unique properties making it quite conformable, citing paragraphs 0009-0015. Applicants strongly disagree. Paragraph 0009 of Stepanian references prior art document USPN 6068882 to Aspen systems. Here, Stepanian states that the aerogel contents described in that document are aerogel powders rather than aerogel monoliths, and that the performance of aerogels in this powder form is significantly lower than monolithic forms. Thus, Stepanian appears to teach away from powder form stating that these products shed significantly, are stiff and readily fracture or fragment, and further, wherein the preferred form of Stepanian is made from a continuous reinforcing layer. Moreover, there is no disclosure or suggestion of a binder in the invention of Stepanian.

The teaching of Stepanian is directed to composites having resilient, compressible fibrous batting reinforcement phase to the aerogel matrix. Unlike the formable, moldable materials of the instant invention, to achieve conformability or deformability, a metal mesh is added as a central layer of the Stepanian composite (pages 5-6) to retain shape after bending since fibrous batting suitable used in the composites has a high degree of resiliency (see above). This is clearly distinguishable from the materials of the instantly claimed invention. Thus, removal of the rejection under 102 (b) is respectfully requested.

IV. The Claims Are Neither Disclosed Nor Suggested by the Cited

References

Claims 1-17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Frank et al. (US 5,786,059) in view of Stepanian et al. (USPG-PUB 2002/0094426 A1). Applicants respectfully traverse this rejection.

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Frank teaches a planar composite having a layer of fiber web and aerogel particles, wherein the web is made of a bicomponent fiber bound both to the aerogel particles and to each other. The Office Action states at paragraph 12 that it would be obvious to modify the composite of Frank by replacing the bicomponent fiber web with a mixture of PTFE and other fibrous material as taught by Stepanian since Frank does not disclose PTFE. Applicants respectfully assert that the combination of Frank and Stepanian do not render obvious the invention as claimed, where neither disclose or suggest a material comprising aerogel particles and a PTFE binder, having the properties claimed, and wherein the material is a powder or a putty.

V. Conclusion

For the foregoing reasons, the present invention as defined by claims 1-12, 14 and 16-17 is neither taught nor suggested by any of the references of record. Accordingly, applicants respectfully submit that these claims are now in form for allowance. If further questions remain, Applicants request that the Examiner telephone Applicants' undersigned representative before issuing a further Office Action.

Respectfully submitted,



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